

What is claimed is:

1. A non-magnetic transducer for a data playback system, comprising:
  - a) a temperature sensitive resistor; and
  - b) a bias current path including the temperature sensitive resistor.
- 5 2. The transducer of claim 1, in which the temperature sensitive resistor comprises a thermistor.
3. The transducer of claim 2, in which the thermistor comprises a material selected from the group consisting essentially of  $\text{Co}_2\text{O}_3$ ,  $\text{Mn}_2\text{O}_3$ ,  $\text{NiO}$ , and boron-doped diamond-like carbon.
- 10 4. The transducer of claim 1, in which the temperature sensitive resistor comprises a resistance temperature detector.
5. The transducer of claim 4, in which the resistance temperature detector comprises a material selected from the group consisting essentially of nickel and platinum.
6. The transducer of claim 1, in which the transducer is a thin film structure.
- 15 7. The transducer of claim 1, in which the transducer and the leads are the same material.
8. The transducer of claim 1, in which the transducer is generally V-shaped.
9. The transducer of claim 1, further comprising a heating element in close proximity to the temperature sensitive resistor.
- 20 10. The transducer of claim 1, further comprising a protective coating layer on the bottom of the transducer.

11. The transducer of claim 1, in which the transducer defines a film plane, and the bias current path lies parallel to the film plane.
12. The transducer of claim 1, in which the transducer defines a film plane, and the bias current path lies perpendicular to the film plane